भारतीय मानक
Indian Standard

IS 15798 (Part 1) : 2021

वस्त्रादि — लेबलिंग एवं मोहरांकन की अपेक्षायें — विशिष्टि

भाग 1 वस्त्र रेशे, तंतु एवं धागे

(पहला पुनरीक्षण)

Textiles — Requirements for Labelling and Marking — Specification

Part 1 Textile Fibres, Filaments and Yarns

(First Revision)

ICS 59.080.30; 61.020

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Man-Made Fibres, Cotton and their Products Sectional Committee, TXD 31

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by Man-Made Fibres, Cotton and their Products Sectional Committee had been approved by the Textile Division Council.

The consumers everywhere are interested in the information pertaining to various requirements of textiles such as blend composition, length, width, mass (g/m^2), colour fastness, fire resistance, shrinkage and care labelling instructions for their subsequent use so that they can make optimum use of the textile and get the full value of the price paid by them. It is, therefore, very important that information pertaining to these as well as other essential requirements are labelled and marked on the consumer textiles so that the interests of the consumers are fully safeguarded. This will also help in curbing the malpractice in the textile trade regarding spurious markings which mislead the consumers, In addition, certain safety and environment friendly requirements of textiles are essential to provide safety to the user and prevent environmental pollution after their final disposal. Keeping in view the health and safety of the consumers of textiles, many countries of the world have brought out regulation which will also help a long way in minimizing of dumping and import of cheap and hazardous textiles in India.

This standard was first published in 2007 and has been revised now to make it more comprehensive and to bring in more clarity on various issues.

This Indian Standard is published in three parts: The other parts in this series are:

Part 2 Fabrics, apparels and made-up items (Consumer textiles).

Part 3 Industrial and technical textiles.

The composition of the Committee responsible for the formulation of this standard is given in Annex F.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated expressing the result of a test or analysis shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

TEXTILES — REQUIREMENTS FOR LABELLING AND MARKING — SPECIFICATION

PART 1 TEXTILE FIBRES, FILAMENTS AND YARNS

(First Revision)

1 SCOPE

1.1 This standard (Part 1) specifies requirements for labelling and marking of textile fibres, filaments and yarns.

1.2 This standard does not apply to speciality fibres/high performance fibres and yarns. Some of such items have been listed in Annex B. This standard also does not apply to yarns, such as Khadi yarns which are manufactured by persons working in their own homes.

1.3 If requirements for textile products that this standard applies to are fully or partially defined by other special regulations, those special regulations shall then apply to those requirements.

2 REFERENCES

The standards listed in Annex A contain provisions, which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated in Annex A.

3 TERMS AND DEFINITIONS

For the purpose of this standard, the following terms and definitions, in addition to those given in other published Indian standards as listed in Annex C, shall apply:

3.1 Apparel — any textile product used for dressing or body covering.

3.2 Extraneous Fibres — Fibres other than those stated on the label or marking of a textile product.

3.3 High Performance Fibres — Specially engineered fibres having unusually high performance characteristics meant for specific use.

3.4 Labelling — Affixing the required information to the textile product by way of attaching/affixing a label containing that information.

3.5 Marking — Indicating the required information directly on the textile product by way of embossing, sewing, embroidering, printing or any other technology of application.

3.6 Pure (100 Percent or All) Textile Products — textile products exclusively composed of the same fibre. A textile product containing not more than 2 percent by mass of extraneous fibres may also be treated as exclusively composed of the same fibre, provided this quantity is justified as being technically unavoidable in good manufacturing practice.

3.7 Speciality Fibres — Specially engineered fibres for specific use.

3.8 Technical Textiles — textile materials and products used primarily for their technical performance and functional properties rather than their aesthetic or decorative characteristics. Other terms used for defining technical textiles include industrial textiles, functional textiles, performance textiles, engineering textiles and hi-tech textiles.

NOTE — Technical textiles are used individually or as a component/part of another product to enhance its functional properties. The examples of technical textiles used individually to satisfy specific functions are fire retardant fabric for uniforms of firemen, coated fabric as awnings, airbags, carpets etc. The examples of technical textiles as a component or part of another product are tyre cord fabrics in tyres, interlining in shirt collars, webbings in seat belts etc. Technical textiles are also used as accessories in processes to manufacture other products like filter fabric in food industry or paper maker felt in paper mills.

3.9 Textile — any filament, fibre, or yarn that can be made into fabric or cloth, and the resulting material itself. The term is derived from the Latin word *textilis* and the French *texere*, meaning “to weave”, and it originally referred only to woven fabrics. It has, however, come to include fabrics produced by other methods. Thus, threads, cords, ropes, braids, lace, embroidery, nets, and fabrics made by weaving, knitting, bonding, felting, or tufting are textiles. Some definitions of the term *textile* would also include those products obtained by the papermaking principle that have many of the properties associated with conventional fabrics.

3.10 Textile Fibre — a fibre that is characterized by flexibility, fineness and higher ratio of length to maximum transverse dimension, which render it suitable for textile applications.

4 LABELLING AND MARKING ON TEXTILES

4.1 The labelling and marking of textile products shall be durable, easily legible, visible and accessible and, in the case of a label, securely attached. Labels or markings may be supplemented by accompanying commercial documents when the products are being supplied to economic operators within the supply chain, or when they are delivered in accordance with regulations arranging public procurements. In that case, the textile fibre names and descriptions of fibre compositions referred in this standard shall be clearly indicated in the accompanying commercial documents.

4.2 Abbreviations for textile fibre names and for descriptions of fibre composition shall not be used, except in the case of indicating the composition of textile products in accompanying commercial documents referred to in this standard, provided that the abbreviations are explained in the same commercial document. The textile fibre names listed in IS 667 or IS 6239/ISO 2076 shall be used for marking.

4.3 Other information about textile products, such as the information about the country of origin, special characteristic of products and alike, is always displayed separately on the same marking or label or on a separate marking or label.

4.4 Exceptionally, if textile products are imported or intended for export, the information referred to in this standard may also be displayed in a foreign language.

4.5 In the case of bobbins, reels, skeins or other small quantities of thread, the information referred to in this standard shall be displayed only if it applies to inclusive labelling of packaging of those products.

5 REQUIREMENTS FOR MARKING ON FIBRES AND FILAMENTS/YARN

The markings for the fibres and filaments/yarns shall be as specified in **5.1** to **5.10** as applicable. The marking shall be done by stenciling/labelling on the bales/cartoons/bags etc. as applicable and shall contain the following information.

5.1 Markings for Cotton Fibre/Bales

a) Name of the variety of cotton;
b) Staple length of fibre (mm) (*see* **5.1.1**);
c) Trash percent (*see* **5.1.2**);
d) Moisture Content, percent, at the time of baling (*see* **5.1.3**);
e) Bundle strength of fibre (gram/tex) (*see* **5.1.4**);
f) Micronaire value (*see* **5.1.5**);
g) Name and address of the Ginning and Pressing factory;
h) Bale running number;
j) Mass (weight) of the pressed bale (kg), at the time of baling;
k) Crop year;
m) Station;
n) Country (in case of export only); and
p) Any other information required by law in force.

NOTE — The letters used for marking shall be approximately 12 mm in height.

5.1.1 The staple length shall be declared at the time of baling and marked after testing by the method prescribed in IS 233 (Part 4). A tolerance of ± 10 percent shall be applicable.

5.1.2 The maximum trash content (excluding invisible loss) shall be marked as under when tested by the method prescribed in IS 4871.

5.1.3 The moisture content of the ginned cotton in the pressed bale shall be tested by the method prescribed in IS 199.

5.1.4 The average bundle strength of the fibre (gram/tex) shall be declared at the time of baling and marked after testing by the method prescribed in IS 3675. A tolerance of ± 10 percent shall be applicable.

5.1.5 The micronaire value shall be declared at the time of baling and marked after testing by the method prescribed in IS 3674. A tolerance of ± 0.2 shall be applicable.

5.2 Markings for Raw Wool Fibre

a) Name and address of the manufacturer;
b) Fibre micron/wool grade (*see* **5.2.1**);
c) Fibre length (*see* **5.2.2**);
e) Quantity-Nett weight (in kg);
f) Country of origin; and
g) Any other information as required by law in force.

5.2.1 The fibre micron/wool grade shall be declared by manufacturer/supplier and shall be determined as per method given in IS 6919 and IS 744 as applicable. The tolerance on declared value shall be as per agreement between buyer and seller.

NOTE — Please refer IS 5910 and IS 5911 for wool fineness grade.

5.2.2 The fibre length shall be declared by manufacturer/supplier and shall be determined as per method given in IS 1377. The tolerance on declared value shall be as per agreement between buyer and seller.

5.3 Markings for Raw Wool Tops

a) Name and address of the manufacturer;
b) Fibre micron/wool grade (*see* **5.2.1**);
c) Fibre length (*see* **5.2.2**);
d) Fibre composition in percentage, if blended;
e) Quantity - Nett weight (in kg);
f) Country of origin; and
g) Any other information as required by law in force.

5.4 Markings for Raw Silk Fibre/Silk Bales/Silk Tops/Silk Books

a) Name and address of the manufacturer;
b) Variety of silk (Mulberry raw silk/Dupion silk/Tasar silk/Muga silk);
c) Grade (*see* **5.4.1**);
d) Size (Denier) (*see* **5.4.2**);
e) Quantity - Nett weight (in kg);
f) Country of origin; and
g) Any other information as required by law in force.

5.4.1 The variety and grade shall be declared by manufacturer/supplier and shall be determined as per method given in IS 15090 (Part 1 to 11). The tolerance on declared value shall be as per agreement between buyer and seller.

5.4.2 The size of silk shall be declared by manufacturer/supplier and shall be determined as per method given in IS 15090 (Part 6). The tolerance on declared value shall be as per agreement between buyer and seller.

5.5 Markings for Other Natural Fibres

a) Name and address of the manufacturer;
b) Name of the fibre and variety as prevalent in the industry, if applicable;
c) Length and fineness characteristics of the fibre, as applicable;
e) Quantity-Nett weight (in kg);
f) Country of origin; and
g) Any other information as required by the buyer or law in force.

5.6 Markings for Man-made Fibres

a) Name and address of the manufacturer;
b) Name of the fibre (*see* **4.2**);
c) Staple length (in mm);
d) Denier;
e) Lot number;
f) Quantity-Nett weight (in kg);
g) Country of origin; and
h) Any other information as required by law in force.

5.6.1 The staple fibre length shall be declared by manufacturer/supplier and shall be determined as per method given in IS 10014 (Part 1). The tolerance on declared value shall be as per agreement between buyer and seller.

5.6.2 The denier of the fibre shall be declared by manufacturer/supplier and shall be determined as per method given in IS 10014 (Part 2). The tolerance on declared value shall be as per agreement between buyer and seller.

5.7 Markings for Spun Yarn

a) Name and address of the manufacturer;
b) Fibre composition (blend percentage) (*see* **5.7.2**);
c) Grade/variety/micron of the fibre used;
d) Count of yarn;
e) Count Strength Product/Reisskilometer Breaking-Kilometer (CSP/RKM) value;
f) Quantity-Nett weight (in kg);
g) Country of origin; and
h) Any other information as required by law in force.

5.7.1 The yarn count shall be declared by manufacturer/supplier and shall be determined as per method given in IS 1315 and IS 681 as applicable. The tolerance on declared value shall be as per agreement between buyer and seller.

5.7.2 The fibre composition of the yarn with tolerance shall be declared by the manufacturer/supplier and shall be determined as per method given in Indian Standards given in Annex D. Content of silk shall be determined as per the method given in Annex E.

5.8 Markings for Man-Made Filament Yarn

a) Name and address of the manufacturer;
b) Name of the material (*see* **4.2**);
c) Type and denier of filament yarn (*see* **5.8.1**);
d) Number of filaments (*see* **5.8.2**);
e) Quantity-Nett weight (in kg);
f) Country of origin; and
g) Any other information as required by law in force.

5.8.1 The type of filament includes the cross-sectional shape and crimp. The denier of filament yarn shall be declared by manufacturer/supplier and shall be determined as per method given in IS 7703 (Part 1). The tolerance on declared value shall be as per agreement between buyer and seller.

5.8.2 The number of filaments in the yarn to be declared by the manufacturer.

5.9 Markings for Mill Spun Silk Yarn

a) Name and address of the manufacturer;
b) Count (Size) of yarn (*see* **5.9.1**);
c) Variety of silk yarn (Mulberry/Tasar/Eri/Muga, etc);
d) Blend composition;
e) Quantity-Nett weight (in kg);
f) Country of origin; and
g) Any other information as required by law in force.

5.9.1 The size of silk shall be declared by manufacturer/supplier and shall be determined as per method given in IS 15090 (Part 6). The tolerance on declared value shall be as per agreement between buyer and seller.

5.9.2 The variety and type shall be declared by manufacturer/supplier and shall be determined as per method given in IS 15090 (Part 1 to 11). The tolerance on declared value shall be as per agreement between buyer and seller.

5.10 Markings for Hand Spun Silk Yarn

a) Name and address of the manufacturer;
b) Count (size) of yarn (*see* **5.9.1**);
c) Variety of silk yarn (Mulberry/Tasar/Eri/Muga, etc);
d) Type of yarn (Matka/Ghicha/Katia/Jhury, etc);
e) Blend composition;
f) Quantity-Nett weight (in kg);
g) Country of origin; and
h) Any other information as required by law in force.

5.11 The details of marking of mixed fibres and multifiber yarns have been explained in clause **6**.

6 MARKING OF MIXED FIBRES AND MULTI FIBRE YARNS

6.1 When only one fibre is contained in the yarn, including where ornamentation and elastic or reinforcement yarns are present in amounts of less than 5 percent and the fibre content is shown exclusive of such ornamentation, elastic or reinforcement, the words "all" or "pure" may be used in lieu of 100 percent.

6.2 A yarn which contains several types of textile fibres shall be marked or labelled by stating names of all constituent textile fibres in the yarn in descending order. A fibre which accounts for up to 5 percent of the total mass of the yarn, or fibres which collectively account for up to 15 percent of the total mass of the yarn, may, where percentage of that (those) other fibres cannot easily be stated at the time of the manufacture, be designated by the term 'other fibres'. Total percentage of those fibres by mass shall be stated accompanied with the term 'other fibres'.

NOTE — For textile products the composition of which is hard to state at the time of their manufacture, the term 'mixed fibres' or the term 'unspecified textile composition' may be used on the label or marking.

6.2.1 *Marking of Decorative Fibres and Fibres with Antistatic Effect*

Visible, isolable fibres which are purely decorative and do not exceed 7 percent of the mass of the finished yarn do not have to be taken into account in the fibre compositions provided for in this standard. Metallic fibres and other fibres which are incorporated in order to obtain an antistatic effect and which do not exceed 2 percent of the weight of the finished product do not have to be taken into account in the fibre compositions provided for in this standard.

6.3 Other Variations

6.3.1 *Other Fibre(s)*

Normally a fibre present in an amount of less than 5 percent by mass must be stated by generic name or as "other fibre". When more than one fibre is present in an amount of less than 5 percent, they may be identified as "other fibres" accompanied by the percentage by mass of the aggregate.

6.3.2 *Elastic Yarns*

An elastic yarn is an elastomer which may or may not be covered with a wrap. Elastic yarns may be found in stretch denim and corduroy fabrics, as well as swimsuit fabrics. It should be noted, however, that elastic yarns added to a limited area in socks serve a functional purpose and are therefore considered as findings. An elastic yarn that is present in an amount of less than 5 percent of the total fibre mass may be disclosed by generic name as an integral part of the fabric or as "other fibre". Alternatively, an elastic yarn present in an amount of less than 5 percent may be disclosed as "Exclusive of elastic", provided that the total of the other fibre(s) disclosed equals 100 percent. An elastic yarn that is present in an amount of 5 percent or more of the total fibre mass must be disclosed as an integral part of the fabric.

6.3.3 *Reinforcement Yarns*

A reinforcement yarn is a portion of a complex yarn that is either present as a core or wrap for the purpose of increasing the strength of the yarn. Binder yarns which are used in novelty-type yarns, such as bouclé yarns, to hold the loops, or in fancy/effect yarns to the core or base, are also considered as a reinforcement yarn. A reinforcement yarn that is present in an amount of less than 5 percent of the total fibre mass may be disclosed by generic name as an integral part of the fabric or yarn, or as "other fibre". As an alternative, a reinforcement yarn present in an amount of less than 5 percent, may be disclosed as "Exclusive of reinforcement", provided that the total of the other fibre(s) disclosed equals

100 percent. A reinforcement yarn that is present in an amount of 5 percent or more of the total fibre mass must be disclosed as an integral part of the fabric.

7 BIS CERTIFICATION MARKING

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed thereunder, and the product(s) may be marked with the Standard Mark.

8 SAMPLING AND CRITERIA FOR CONFORMITY FOR FIBRE, YARN, FABRIC AND READYMADE GARMENTS

8.1 Lot for Fibre/Man-made Filament

All bales/bags or packages containing same type of fibre and of same characteristics delivered to a buyer against one despatch note shall constitute a lot.

8.2 Lot for Yarn

All bales/bags or packages containing same type and characteristics of yarn delivered to a buyer against one despatch note shall constitute a lot.

8.4 The number of bales/bags/packages shall be selected at random in accordance with Column 2 and 3 of Table 1. To ensure the randomness of selection, IS 4905 : 2015/ISO 24153 : 2009 may be followed.

Table 1 Sample Size

(*Clauses* 8.4 *and* 8.5)

Sl No. (1)	Lot Size (2)	Sample Size (3)	Permissible Number of Non-Conforming Pieces (4)
i)	up to 50	5	0
ii)	51-150	8	0
iii)	151-300	13	1
iv)	301-500	20	1
v)	501-1000	48	3
vi)	1001 and above	50	3

8.5 Number of Tests and Criteria for Conformity

The samples selected from the lot shall be tested for all applicable requirements as specified in respective marking clause. The sample selected shall be declared non-conforming, if it does not meet any of the applicable requirements specified. The lot shall be declared conforming to the requirements of this standard if the total number of defective pieces does not exceed the value given in Col 4 of Table 1.

ANNEX A

(*Clause* 2)

LIST OF REFERRED INDIAN STANDARDS

IS No.	*Title*
199 : 1989	Textiles — Estimation of moisture, total size or finish, ash and fatty matter in grey and finished cotton textile material (*third revision*)
233 (Part 4) : 2020	Textiles — Methods for determination of length parameters of cotton fibres: Part 4 Estimation of length, uniformity ratio and uniformity index by the optical scanning method (*second revision*)
667 : 1981	Methods for identification of textile fibres (with supplement)
681 : 2015	Textiles — Methods for determination of universal count of woollen and worsted yarn (*first revision*)
744 : 2000	Textiles — Methods for determination of wool fibre diameter percentage of medullated fibres and kemp fibre (amalgamating IS 1348 and 2899)
1315 : 1977	Method for determination of linear density of yarn spun on cotton system
1377 : 1971	Methods for determination of mean fibre length of wool
3674 : 1966	Method for determination of micronaire value of cotton fibres
3675 : 1966	Method for determination of bundle strength (tenacity) of cotton fibres
4871 : 1978	Method for determination of lint and trash content of cotton by means of mechanical-pneumatic machines
4905 : 2015/ ISO 24153 : 2009	Random sampling and randomization procedures (*first revision*)
5910 : 1977	Fineness grades of wool
5911 : 1977	Fineness grades of wool tops
6239 : 2014/ ISO 2076 : 2010	Textiles — Man-made fibres — Generic names (*second revision*)
6919 : 2019	Wool — Determination of mean diameter of fibres — Air-permeability method (*first revision*)
7703 (Part 1) : 1990	Methods of test for continuous filament polyester and polyamide flat yarn: Part 1 Linear density (superseding IS 1226)
10014 (Part 1) : 1984	Methods of tests for man-made staple fibres: Part 1 Determination of length
10014 (Part 2) : 1981	Methods of tests for man-made staple fibres: Part 2 Determination of linear density
15090 (Part 1 to 11) : 2002	Raw silk — Grading and methods of tests: Parts 1 to 11

ANNEX B

(*Clause* 1.2)

TEXTILE PRODUCTS ON WHICH THIS STANDARD IS NOT APPLICABLE

a) Carbon fibres.
b) Glass fibres.
c) Meta aramids.
d) Para aramids.
e) High tenacity/super high tenacity nylon.
f) High tenacity/super high tenacity polyester.
g) High tenacity/super high tenacity polypropylene.
h) High tenacity/super high tenacity viscose.
j) Ceramic fibre.
k) Zylon.
m) Ultra high molecular weight polyethylene.
n) Nylon 66.

ANNEX C

(*Clause* 3)

LIST OF INDIAN STANDARDS ON GLOSSARY OF TEXTILE TERMS

IS No.	*Title*
232 : 1985	Glossary of textile terms — Natural fibres
1324 : 1966	Glossary of textile terms relating to man-made fibre and fabric industry
2364 : 1987	Glossary of textile terms — Woven fabrics
3596 : 1967	Glossary of terms relating to hosiery
4402 : 2019/ ISO 1107 : 2017	Textiles — Fishing nets — Netting — Basic terms and definitions (*first revision*)
5476 : 1986	Glossary of term relating to jute
6239 : 2014/ ISO 2076 : 2010	Textiles — Man-made fibres — Generic names
11205 : 2011/ ISO 2424 : 2007	Textile floor coverings — Vocabulary
11206 : 1984	Glossary of textile terms — Wool and other animal fibres their processing and products
13321 (Part 1) : 1992	Glossary of terms for geo-synthetics: Part 1 Terms used in materials and properties
14281 : 2004	Textiles — Glossary of terms relating to made-up textile items and ready-made garments

ANNEX D

(*Clause* 5.7.2)

LIST OF INDIAN STANDARDS ON TEST METHODS FOR BLEND COMPOSITION

IS No.	*Title*
1889 (Part 1) : 1976	Method for quantitative chemical analysis of binary mixtures of regenerated cellulose fibre and cotton: Part 1 Sodium zincate method
1889 (Part 2) : 1976	Method for quantitative chemical analysis of binary mixtures of regenerated Cellulose fibres and cotton: Part 2 Cadoxen solvent method
1889 (Part 3) : 1979	Method for quantitative chemical analysis of binary mixtures of regenerated cellulose fibres and cotton: Part 3 Formic acid-zinc chloride
1889 (Part 4) : 1979	Method for quantitative chemical analysis of binary mixtures of regenerated cellulose fibres and cotton: Part 4 Sulphuric acid method
2005 : 1988	Methods for quantitative chemical analysis of binary mixtures of nylon 6 or nylon 6, 6 fibres and certain other fibres
2006 : 1988	Method for quantitative chemical analysis of binary mixtures of protein fibres with certain other non-protein fibres
2176 : 1988	Textiles — Binary mixtures of cellulose acetate and certain other fibres — Methods for quantitative chemical analysis
2177 : 1988	Textiles — Binary mixtures of cellulose triacetate and secondary cellulose acetate fibres — Methods for quantitative chemical analysis
2727 : 1964	Method for quantitative chemical analysis of binary mixtures of manila and sisal fibres
3416 : 1988	Method for quantitative chemical analysis of mixtures of polyester fibres with cotton or regenerated cellulose
3421 : 1988	Textiles — Binary mixtures of acrylic certain modacrylics and certain other fibres — Methods for quantitative chemical analysis
6503 : 1988	Method for quantitative chemical analysis of ternary mixtures of protein fibres nylon 6 or nylon 6 6 and certain other fibres
6504 : 1979	Method for quantitative chemical analysis of ternary mixtures of viscose rayon cotton and protein fibres
6570 : 1972	Method for quantitative chemical analysis of binary mixtures of jute and animal fibres
8476 : 1977	Method for determination of wool content in woollen textile materials
9068 : 1979	Recommended methods for the removal of non-fibrous matter prior to quantitative analysis of fibre mixtures
9889 : 1988	Method for quantitative chemical analysis of binary mixtures of silk and wool or hair
9896 : 1981	Methods for quantitative chemical analysis of mixtures of polyolefin fibres and other fibres
11870 : 1986	Method for quantitative chemical analysis of binary mixtures of polypropylene and polyethylene
17269 : 2019	Identification, labelling and marking of *Pashmina* products

ANNEX E

(*Clause* 5.7.2)

DETERMINATION OF SILK CONTENT OF TEXTILE MATERIALS

E-1 TEXTILE MATERIALS CONTAINING NON-PROTEIN FIBRES

E-1.1 Identify the presence of protein fibers other than silk in the textile material by the preliminary and staining tests as specified in IS 667. If protein fibers are not present then follow the procedure specified in **E-1.1.1** to **E-1.1.7**.

E-1.1.1 Take about 10 to 15 g of the material and extract it in a Soxhlet apparatus with light petroleum hydrocarbon solvent (*see* IS 1745) for 1 hat a minimum rate of 6 cycles/h. Allow the light petroleum hydrocarbon solvent to evaporate and then extinct in a soxhlet apparatus with water for 2 h at a minimum rate of 6 cycles/h.

E-1.1.2 Take a representative sample weighing about 5 g from the pretreated sample and place it in a suitable container. Place the container in the drying oven maintained at a temperature of 105 ± 3 °C and dries the specimen to a constant mass. The mass shall be taken as constant when the difference between the two successive weighings made at intervals of 20 min is less than 0.05 percent.

E-1.1.3 Determine the mass of the sample without removing it from the oven. In case the drying oven is not provided with the weighing balance, remove the specimen from the oven and transfer it to a weighing container of known mass provided with a light lid. The transfer of the specimen should be done in as less a time as possible. Cool the specimen and the container in a desiccator to room temperature before weighing. Weigh the container and then find the mass (M_1) of the sample to an accuracy of 10 mg.

E-1.1.4 Transfer the remaining sample in a beaker together with at least 100 times its mass of 5 percent solution of sodium or potassium hydroxide and boil slowly until the silk fibers are completely dissolved. After a period of 10 min of boiling, filter through a Gooch crucible and wash the residue first with warm water, then with 3 percent solution of glacial acetic acid and finally with hot water. Dry the residue at 105 ± 3 ºC.

E-1.1.5 Examine carefully the residue and the pores of the crucible for non-fibrous matter, for example, burrs, seeds, finishing materials, dyestuff residues, as well as for incompletely dissolved. If any such contaminant is present, it shall be dissolved or otherwise removed. For example, un- dissolved silk protein shall be removed by treatment with fresh boiling 5 percent sodium hydroxide or potassium hydroxide; and bum and seeds shall be lifted out with forceps. Rinse and dry the residue to constant mass at 105 ± 3 °C. Determine the mass of the residue to an accuracy of 10 mg (M_2).

E-1.1.6 Determine the percentages of non-silk fibrous matter and other foreign matter including metallic and weighting material present by the following formulae:

Percentage of non-silk

$$\text{Fibrous matter and other} = \frac{M_2 \times 100}{M_1}$$

Foreign matter present

E-1.1.7 Similarly, determine the percentages in the remaining specimens and calculate the average.

E-1.1.8 From the value obtained in **E-1.1.6**, calculate the average percentage of silk in the material by subtracting it from 100.

E-2 TEXTILE MATERIALS CONTAINING PROTEIN FIBRES

Follow the procedure specified in **E-1.1.1** to **E-1.1.7** except that dissolve the silk in 80 percent (*m*/*v*) sulphuric acid solution instead of 5 percent sodium hydroxide solution as specified in **E-1.1.4**.

ANNEX F

(*Foreword*)

COMMITTEE COMPOSITION

Man-Made Fibres, Cotton and their Products Sectional Committee, TXD 31

Organization	*Representative(s)*
ICAR-Central Institute for Research on Cotton Technology, Mumbai	Dr P. K. Mandhyan (***Chairman***) Dr A. Arputharaj (*Alternate*)
Ahmedabad Textile Industry's Research Association, Ahmedabad	Shrimati Deepali Plawat Shri Jigar Dave (*Alternate*)
Association of Synthetic Fibre Industries New Delhi	Shri M. S. Verma
Bidhata Industries Pvt Ltd, Mumbai	Shri R. K. Pacheriwala Shri Rohit Pacheriwala (*Alternate*)
Confederation of Indian Textile Industry, New Delhi	Shri D. K. Nair Shri Shaju Mangalam (*Alternate*)
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